

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re PATENT application of:

Applicant(s): Birkenbach et al.

Serial No: 10/715,962

Filed: November 18, 2003

Title: DEVICE, SYSTEM AND METHOD FOR INTEGRATING DIFFERENT
MEDICALLY APPLICABLE APPARATUSES

Examiner: Matthew J. Kasztejna

Art Unit: 3739

Docket No. SCHWP0184USA

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The undersigned submits this brief for the Board's consideration of the appeal of the Examiner's decision, mailed October 28, 2008, finally rejecting claims 2, 3, 6, 9, 10, 20, 22 and 24-28 of the above-identified application. A payment by credit card covering the fee for filing this brief is included.

I. Real Party in Interest

The real party in interest in the present appeal is BrainLAB AG, the assignee of the present application.

II. Related Appeals and Interferences

Neither appellant, appellant's legal representative, nor the assignee of the present application are aware of any appeals or interferences, which will directly affect, which will be directly affected by, or which will have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 2, 3, 6, 9, 10, 20, 22 and 24-28 are pending. Claims 1, 4, 5, 7, 8, 11-19, 21 and 23 have been canceled without prejudice or disclaimer of the subject matter contained therein. Claims 2, 3, 6, 9, 10, 20, 22 and 24-28 stand finally rejected and are the subject of this appeal. A correct copy of the claims 2, 3, 6, 9, 10, 20, 22 and 24-28 is reproduced in the Claims Appendix.

IV. Status of Amendments

No amendments have been filed after the final rejection of claims 2, 3, 6, 9, 10, 20, 22 and 24-28, which was mailed on October 28, 2008.

V. Summary of Claimed Subject Matter¹

The claimed subject matter relates generally to a system for integrating different medical devices having different manufacturer-specific protocols and associated command protocol software and a central control unit/central interface unit configured to couple to input and output connections of the control apparatuses having different manufacturer-specific command protocols. The claimed system provides a simpler and more cost-effective solution to integrating different medical devices having different command protocols without having to determine, download or directly interface with any special protocol for the manufacturer of the given control apparatus. [p. 4, ln. 4-26; p. 8, ln. 7-17].

The Invention as Defined in the Rejected Claims

Claim 20 - A system (1) comprising a central control unit (2) configured to couple to input and output connections of at least two medically applicable instruments (G1, G2, G3, G4) via at least two control apparatuses (3a, 3b, 3c, 3d) having different manufacturer-specific command protocols and associated command protocol software; and a common output display device (4) coupled to the central control unit (2) via a bus, wherein the bus provides electrical separation between the common output display device (4) and the central control unit (2); at least one input device (4; 6a-6f) coupled to

¹ This summary is presented in compliance with the requirements of 37 C.F.R. §41.37(c)(1)(v), mandating a concise explanation involved in the appeal. Nothing contained in this summary is intended to change the specific language of the claims described, nor is the language in the summary to be construed so as to limit the scope of the claims in any way.

the central control unit (2) and configured to receive operator input; wherein the central control unit (2) is configured to receive output signals from the at least two control apparatuses (3a-3d) and adapt the received output signals for display on the common output display device (4), and the central control unit (2) is configured to receive input signals from the at least one input device (4; 6a-6f) and relay the received input signals to the at least two control apparatuses (3a-3d); and wherein the central control unit (2) is configured to receive output signals and relay received input signals without conversion of the received input signals to command protocols of the least two medically applicable apparatuses. [p. 4, ln. 4-26; p. 8, ln. 7-17;].

Claim 22 - The system as set forth above, wherein the common output display device (4) is a single central input and output display device comprised of a single touch screen display (4; FIG. 2). [p. 10, ln. 15-21].

Claim 24 - In a system including at least two medically applicable apparatuses (G1, G2, G3, G4), the medically applicable apparatuses (G1, G2, G3, G4) each being coupled to a different control apparatus (3a-3d), the control apparatuses (3a-3d) having different manufacturer-specific input and output specifications, a central interface unit (2) coupled to input and output connections of said at least two control apparatuses (3a-3d), wherein the central interface unit (2) includes at least one processor (20) that is configured to convert different manufacturer-specific display information and/or image formats from the control apparatuses into a predetermined, defined image format for display on a common output display device (4), wherein the central interface unit (2) is configured to provide selective display of output data from the medically applicable

apparatuses alone or in combination on the common output display device (4; FIG. 2). [p. 4, ln. 4-26; p. 8, ln. 7-17; p. 10, ln. 11-26].

Claim 27 - A system (1) comprising a central control unit (2) configured to couple to input and output connections of at least two medically applicable instruments (G1, G2, G3, G4) via at least two control apparatuses (3a-3d) having different manufacturer-specific command protocols and associated command protocol software; a common output display device (4) coupled to the central control unit (2) via a bus, wherein the bus provides electrical separation between the common output display device (4) and the central control unit (2); and at least one input device (4; 6a-6f) coupled to the central control unit (2) and configured to receive operator input; wherein the central control unit (2) is configured to receive input signals from the at least one input device (4; 6a-6f) and forward the received input signals to the at least two control apparatuses (3a-3d) without controlling the medically applicable apparatuses (G1, G2, G3, G4). [p. 4, ln. 4-26; p. 8, ln. 7-17].

Claim 28 - The system as set forth above, wherein the central control unit (2) is configured to exchange input and output signals with the control apparatuses (3a-3d) without conversion of the command protocol software associated with the control apparatuses (3a-3d). [p. 4, ln. 4-26].

VI. Grounds of Rejection to Be Reviewed on Appeal

A. Claims 20 and 28 stand finally rejected under 35 U.S.C. § 112, 1st ¶, as failing to comply with the written description requirement.

B. Claim 27 is rejected under 35 U.S.C. § 112, 1st ¶, as failing to comply with the enablement requirement.

C. Claims 2-3, 6, 9-10, 20, 22 and 24-28 stand finally rejected under 35 U.S.C. § 102(e) as being unpatentable over U.S. Patent No. 5,788,688 (*Bauer*).

VII. Argument²

The rejections advanced by the Examiner are improper and should be reversed for at least the following reasons.

A. Claims 20 and 28 stand finally rejected under 35 U.S.C. § 112, 1st ¶.

Claims 20 and 28 stand finally rejected under 35 U.S.C. § 112, 1st ¶, as failing to comply with the written description requirement. For at least the following reasons discussed below, this rejection should be reversed.

Claim 20

Claim 20 recites a system that includes, *inter alia*, a central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software. The central control unit is configured to receive output signals and relay received input signals without conversion of the received input signals into the command protocols of the at least two medically applicable apparatuses.

The Examiner's rejection is directed to the claim 20 recitation of "wherein the central control unit is configured to receive output signals and relay received input

² In the event the Examiner clarifies the rejections of any claims that have not been argued separately, Applicant reserves the right to argue separately such claims.

signals without conversion of the received input signals to command protocols of the at least two medically applicable apparatuses.”³

In rejecting claim 20, the Examiner points to what he perceives to be a statement in the specification that contradicts claim 20. In particular, the Examiner points to page 10, lines 21-24 of the application, which states the following, “one or more processors 21 **can** be provided in the central control unit 2, to convert the control signals coming from the screen 4 into formats corresponding to the respective control apparatus 3a-3d, which **can** be forwarded to the corresponding control apparatus 3a-3d via the lines 5a-5d.” (Emphasis added).

In focusing on this single passage of the application, the Examiner ignores other significant portions of the application.⁴ For example, at page 4, lines 4-26, the application discloses the following.

Only the signals of the control apparatus of the medical instruments that are necessary for interaction with a user are forwarded to the central control unit or forwarded from the central control unit to the individual control apparatus. **Therefore, each individual apparatus can be used, without modifying the software or hardware, as it was designed to be by the respective manufacturer.** The medical instrument coupled to the individual control apparatus can continue to be controlled as specified in the corresponding control apparatus by the manufacturer. In accordance with the invention, the display of images, signals or operational conditions of the medical instruments important for the user, such as output signals of the control apparatus, are detected by the central control unit and displayed on a central display, such as for example a flat screen. One or more control apparatuses, and therefore medical instruments, can be

³ Final Office Action, page 2.

⁴ “It is now well established that a satisfactory description may be in the claims or any other portion of the originally filed specification.” MPEP 2163.

selected using a central input device and signals for determining or altering the operational mode or functionality can be transmitted on by the central input device to said control apparatus of the respective medical instruments via the central control unit.

In this way, the often large number of monitors and control apparatuses in the operating area, often having different operational designs, can be reduced. For example, a single monitor including a central input device for realizing a unified operational design can be realized. ***Different control apparatuses of different medical instruments can be controlled without, for example, rewriting the software used in the control apparatus or having to predetermine a special protocol for the manufacturer of a control apparatus, for communicating with the central control unit.*** (Emphasis added).

In addition, at page 8, lines 7-17, the application discloses the following.

In accordance with another aspect, the invention relates to a method for operating at least two medical instruments or apparatuses simultaneously, in parallel or sequentially, wherein ***the output signals of the medical instruments or of the control apparatuses coupled to the medical instruments are transmitted to a central control unit. The control unit can transmit input signals to the medical instruments or the control apparatuses coupled to the respective medical instruments.*** The output signals of the medical instruments or of the control apparatuses coupled to them can be transmitted from the central control unit to a central display device. ***Data or signals can be transmitted from a central input unit to the central control unit, which forwards to one or more control apparatuses or directly to the medical instruments.*** (Emphasis added).

As such, it is respectfully submitted that the Examiner has failed to view the specification as a whole. His reliance on page 10, lines 21-14, only deals with one embodiment, which is indicated as being optional based on use of the word "can". By way of example, the above-quoted portions of the application show possession of the

invention recited in claim 20. For at least these reasons, the rejection should be reversed.

Claim 28

The above remarks with respect to claim 20 are equally applicable to claim 28, and therefore incorporated herein as if fully set forth.

Dependent claim 28 recites “wherein the central control unit is configured to exchange input and output signals with the control apparatuses without conversion of the command protocol software associated with the control apparatuses.”

As noted above, the Examiner’s rejection appears to be based on a perceived contradiction between the claim 28 recitation and the disclosure of the optional embodiment on page 10, lines 21-14, of the present application. As shown above, the Examiner’s reliance on only this passage of the present application ignores other passages that demonstrate possession of the invention recited in claim 28. For example, disclosures in the present application at page 4, lines 4-26, and at page 8, lines 7-17, (see passages reproduced above) illustrate other embodiments that support claim 28 and that show possession of the invention recited in claim 28. For at least these reasons, the rejections should be reversed.

B. Claim 27 is rejected under 35 U.S.C. § 112, 1st ¶.

Claim 27 stands finally rejected under 35 U.S.C. § 112, 1st ¶, as failing to comply with the enablement requirement. For at least the following reasons discussed below, this rejection should be reversed.

The Examiner asserts that the “claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.”⁵ In particular, the Examiner appears to object to the claim 27 recitation of “wherein the central control unit is configured to receive input signals from the at least one input device and forward the received input signals to the at least two control apparatuses without controlling the medically applicable apparatuses.” As with the § 112, 1st ¶ rejections above, this rejection relies on paragraph [0034] of the present application. In this portion of the Office Action, the Examiner equates transfer of signals with controlling. However, the application as a whole, including the exemplary disclosures in the present application at page 4, lines 4-26, and at page 8, lines 7-17, (see passages reproduced above), describes embodiments in which the central control unit “transfers” or “relays” signals from the input device to the control apparatuses. The control apparatuses then control the medically applicable apparatuses based on the signals relayed or transferred by the central control unit.

⁵ Final Office Action, page 3.

This operation can be contrasted with one where a control unit interfaces with a special manufacturer-specific command protocol and associated command protocol software. The claimed operation allows for interaction with different medical instruments via their control apparatuses without having to rewrite or interface with the software used in the control apparatus, and without having to predetermine a special protocol for the manufacturer of the given control apparatus.

Indeed, the Examiner's language on page 3 of the Office Action seems highlight the above-described distinction between controlling and simply relaying or transferring signals. On page 3, the Examiner states, "the central control system does in fact passively control the medical instruments. If the central control system fails to *transfer* the inputted signal to the control apparatuses, then the medical instruments will never receive an inputted signals . . ."

For at least these reasons, it is respectfully submitted that the invention recited in claim 27 is enabled and the rejection should be reversed.

C. Rejection of Claims 2-3, 6, 9-10, 20, 22 and 24-28 under 35 U.S.C. § 102(b).

Claims 2-3, 6, 9-10, 20, 22 and 24-28 stand finally rejected under 35 U.S.C. § 102(b) as being anticipated by **Bauer**. For at least the following reasons discussed below, this rejection should be reversed.

Anticipation

As pointed out in MPEP 2131 in order to anticipate an invention recited in a particular claim, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." Further, [t]he elements must be arranged as required by the claim." "[A] prior art reference - in order to anticipate under 35 U.S.C. § 102 - must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements "arranged as in the claim." Net Moneyin, Inc. v. Verisign, Inc., 545 F.3d 1359 (Fed. Cir. 2008), *citing* Connell V. Sears, Roebuck & Co., 722 F.2d 1542, 1548 (Fed. Cir. 1983).

Claim 20

Claim 20 recites a system that includes, *inter alia*, a central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software. The central control unit is configured to receive output signals and relay received input

signals without conversion of the received input signals into the command protocols of the at least two medically applicable apparatuses.

The claimed system includes a central control unit that is configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software. The central control unit allows for the relay of received input to control apparatuses associated with different medical instruments without having to convert the received input into various command protocols associated with the medical devices, and without having to determine or download any special protocol for the manufacturer of the given control apparatus.

As such, the claimed invention provides a simpler and more cost-effective solution in which input and output signals are exchanged between the central control unit and the respective control apparatuses without download and modification of the command protocols and without direct control of the medical devices coupled to the respective control apparatuses.

Bauer has not been found to disclose, in a manner like that recited in claim 20, a system including a central control unit that is configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software, wherein the central control unit allows for the relay of received input to control apparatuses associated with different medical instruments without having to convert the received input into various command protocols associated

with the medical devices, and without having to determine or download any special protocol for the manufacturer of the given control apparatus.

In fact, **Bauer** has not been found to make any mention of working with multiple control apparatuses having different manufacturer-specific command protocols and associated command protocol software, let alone the claimed central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software, and configured to receive output signals and relay received input signals without conversion of the received input signals into the command protocols of the at least two medically applicable apparatuses.

In finally rejecting claim 20,⁶ the Examiner points to **Bauer** at col. 3, lines 1-20, and col. 7, lines 5-35 (reproduced below).

The command and control center includes a surgeon's control panel operatively positioned at the surgeon's operating station. The surgeon's control panel includes display means for displaying data relating to status of the pieces of surgical equipment and input means for receiving commands entered manually. A plurality of communication interface circuits are included, one for each piece of surgical equipment, for transmitting data representing status of the associated surgical control head and for receiving remote commands for driving the associated surgical instrument. A central controller is operatively connected to each communication interface circuit and the surgeon's control panel. The central controller transmits to the pieces of surgical equipment commands entered manually on the surgeon's control panel and transmits to the surgeon's control panel status of the surgical control heads for display on the display means to provide a

⁶ Final Office Action, page 3.

surgeon direct command and control of the pieces of surgical equipment located in the non-sterile area remote from the surgeon's operating station.⁷

The enclosure 51 houses internal circuitry for producing an electrical output signal to the surgical instrument 54 as controlled by the manually operated buttons and switches 58. The internal circuitry typically includes a processor based control circuit connected to a power circuit which develops the electrical output to the surgical instrument 54.

Although not specifically described, each of the pieces of surgical equipment 44, 46, 48, 49 and 50 are similar in that each includes a control head and associated devices developing an output to drive a respective associated surgical instrument 54, 60, 62, 74 and 64, see also FIG. 2. Although the pieces of surgical equipment are shown for clarity as mounted in a single rack, each is often mounted separately.

A typical endoscopic operating room includes a video surgical display monitor 68 which displays video output from an endoscopic camera 74. In accordance with the invention, the monitor 68 is used in connection with the SCC system 40. The SCC system 40 provides direct command and control at the surgeon's operating station 32 for each of the equipment control units 44, 46, 48, 49 and 50. Generally, the command and control system 40 includes a central controller in the form of an Equipment Control Unit (ECU) 66, which may be located in the rack 42, a surgeon's control panel 70, and an optional keyboard 67 and an optional programmers monitor 69. A microphone 72 may also be used. The control panel 70 and microphone 72 may be mounted to the operating table 38, a supplemental sterile instrument table placed on the patient on the operative field, attached to the anesthesia drape stand, or with a free standing stand as appropriate. All of these mounting options provide ready access to the surgical team without violation of sterile procedures.⁸

While **Bauer** appears to discuss control of surgical equipment, the above-quoted portion of **Bauer** is insufficient to anticipate the claimed system and central control unit that is configured to couple to input and output connections of at least two medically

⁷ **Bauer**, col. 3, lines 1-20.

⁸ **Bauer**, col. 7, lines 5-35.

applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software and to receive output signals and relay received output signals without conversion of the received input signals to command protocols of the at least two medically applicable apparatuses.

Accordingly, the final rejection of claim 20 is improper because it is not supported by the relied-upon reference.

Claim 22

Claim 22 depends from claim 20, therefore, the arguments presented above with respect to the deficiencies of **Bauer** in relation to claim 20 are equally applicable to claim 22. In addition, claim 22 recites wherein the common output display device is a single central input and output display device comprised of a single touch screen display.

In addition to the above-noted deficiencies of **Bauer** with respect to claim 20, **Bauer** has not been found to disclose the claimed output display device including a single central input and output display device comprised of a single touch screen display.

In support of the rejection,⁹ the Examiner points to **Bauer** at col. 9, lines 1-52 (reproduced below).

⁹ Final Office Action, page 5.

Membrane technology fabrication produces a sealed unit construction of materials meeting stringent biomedical specifications such as toleration of chemical immersion sterilization. Additionally, the sterile control panel switch and display panel and layout meets human design specifications such as tactile feel, anti-glare features and back illumination capability, items important in the dimly lit operating room. The membrane panel may be backlit if necessary or desired.

The sterile control panel 70 duplicates the essential elements of output power setting and configuration displays found on the control unit of each individual device 44, 46, 48, and 50, see FIG. 1, so that adjustments made from the operating table positions can be done conveniently, independently, rationally and safely. *The layout of the membrane switch and display panel 124 is designed with human factors of the surgeon in mind. The large rectangular switches, labeled "INSUFFLATION", "LA SER", "BIPOLAR", "MONOPOLAR", and "AUXILIARY", are designed to illuminate the expanded display for that section on the HUD, as discussed below. Each switch is designed so that if any part of the raised switch surface is depressed, then the action is initiated. Triangular switches are used as an increase or decrease of particular parameter values. "ENTER" rectangular switches are used to set a value into memory and to "actuate" or transmit a command to increase or decrease the operating status of the related equipment.* A bright red octagon "HALT" switch is designed into a panel as a safety feature. Actuation of the HALT switch returns each piece of surgical equipment 44, 46, 48 and 50 to its own local control at its associated control head, e.g., 52, see FIG. 1, and to maintain a stable endoscopic environment which includes adequate illumination, video image, and insufflation to provide the surgeon visualization of the operative field. This would also operate the video frame store card 90 and video switch 94 to direct raw camera output from the camera control unit 49 directly to the surgical monitor 68. All other switches control mode functions and power to remote surgical equipment. Many of these switches are co-located with a small red indicator display that reflects whether the mode or power is on or off. All numerical indicators are seven segment 0.5 inch red high intensity displays. Alternatively, liquid crystal displays with backlighting capability could be used. Bar graph displays are used to reflect percentage increase/decrease as in the light control areas as well as the insufflation preset and actual display. These indicators are ten segment, high density display units. Multiple displays indicate warnings and are composed of a series of high intensity, discrete red LED's. As "GP FAULT", "OVER PRESSURE", and "LOW VOLUME" warnings are important and warrant immediate attention by a surgeon, they are designed in software to blink on and off. (Emphasis added).

As can be seen, this portion of **Bauer** discusses a membrane switch panel with raised switch portions - not single central input and output display device comprised of a single touch screen display. As such, **Bauer** fails to support the anticipation rejection of dependent claim 22.

For at least these additional reasons, the rejection of claim 22 should be reversed.

Claims 24-26

The above remarks with respect to claim 20 are equally applicable to claim 24, and therefore incorporated herein as if fully set forth.

Claim 24 recites a system that includes, *inter alia*, at least two medically applicable apparatuses each being coupled to a different control apparatus, where the control apparatuses have different manufacturer-specific input and output specifications; and a central interface unit coupled to input and output connections of at least two control apparatuses, wherein the central interface unit includes at least one processor that is configured to convert different manufacturer-specific display information and/or image formats from the control apparatuses into a predetermined, defined image format for display on a common output device, wherein the central interface unit is configured to provide selective display of output data from the different medically applicable apparatuses alone or in combination on the common output display device.

Bauer has not been found to disclose, in a manner like that recited in claim 24, a central interface unit coupled to input and output connections of at least two control apparatuses having different manufacturer-specific input and output specifications, wherein the central interface unit includes at least one processor that is configured to convert different manufacturer-specific display information and/or image formats from the control apparatuses into a predetermined, defined image format for display on a common output device.

While the Examiner points to Fig. 1 and col. 3, lines 1-20 of **Bauer** (reproduced above), it is respectfully submitted that this reliance is misplaced. As discussed above with respect to claim 20, **Bauer** has not been found to make any mention of a central interface unit coupled to input and output connections of at least two control apparatuses having different manufacturer-specific input and output specifications, let alone the central interface unit recited in claim 24.

As such, **Bauer** cannot be fairly interpreted as anticipating the invention recited in claim 24. Therefore, the rejection is improper and should be reversed because it is not supported by the relied-upon reference. Claims 25 and 26 depend from claim 24 and should be in condition for allowance for at least the reasons provided above.

Claims 27, 2, 3, 6, 9 and 10¹⁰

The above remarks with respect to claims 20 and 24 are equally applicable to claim 27, and therefore incorporated herein as if fully set forth.

Claim 27 recites a central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software. The central control unit is configured to receive input signals from an input device and forward the received input signals to the at least two control apparatuses without controlling the medically applicable control apparatuses.

Bauer has not been found to disclose, in a manner like that recited in claim 27, a central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software, wherein the central control unit is configured to receive input signals from an input device and forward the received input signals to the at least two control apparatuses without controlling the medically applicable control apparatuses.

In support of the rejection, the Examiner points to **Bauer** at col. 3, lines 1-37, and col. 4, lines 28-33 (reproduced below).

Bauer, Col. 3, lines 1-37, discloses the following.

The command and control center includes a surgeon's control panel operatively positioned at the surgeon's operating station. The surgeon's control panel includes display

¹⁰ Claims 2, 3, 6, 9 and 10 were previously amended to depend from independent claim 27.

means for displaying data relating to status of the pieces of surgical equipment and input means for receiving commands entered manually. A plurality of communication interface circuits are included, one for each piece of surgical equipment, for transmitting data representing status of the associated surgical control head and for receiving remote commands for driving the associated surgical instrument. A central controller is operatively connected to each communication interface circuit and the surgeon's control panel. The central controller transmits to the pieces of surgical equipment commands entered manually on the surgeon's control panel and transmits to the surgeon's control panel status of the surgical control heads for display on the display means to provide a surgeon direct command and control of the pieces of surgical equipment located in the non-sterile area remote from the surgeon's operating station.

It is a feature of the invention to further provide an endoscopic camera electrically connected to the central controller for developing video image signals for a surgical procedure and a video monitor electrically connected to the central controller for displaying video images from the camera.

It is a feature of the invention that the central controller includes a video frame store card operatively connected between the camera and the display monitor for storing frames of video data for display on the display monitor.

It is another feature of the invention that the central controller includes means for transmitting to the frame store card status for the surgical devices for display on the video display monitor.

It is another feature of the invention that the display monitor displays video images from the camera with select fields overwritten to display status information.

Bauer, Col. 4, lines 28-33, discloses the following.

A frame store card serves as an electronic pallet to compose and superimpose graphic images onto a surgical image transmitted from an endoscopic camera for display on a heads-up display (HUD) monitor at the surgical operating station.

Again, as noted above, **Bauer** has not been found to disclose use of multiple medical instruments having respective control apparatuses with different manufacturer-

specific command protocols, let alone the claimed central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software, wherein the central control unit is configured to receive input signals from an input device and forward the received input signals to the at least two control apparatuses without controlling the medically applicable control apparatuses.

As such, **Bauer** cannot be fairly interpreted as anticipating the invention recited in claim 27. Therefore, the rejection is improper and should be reversed because it is not supported by the relied-upon reference. Claims 2, 3, 6, 9 and 10 depend from claim 27 and should be in condition for allowance for at least the reasons provided above.

Claim 28

Claim 28 depends from claim 27, therefore the arguments presented above with respect to the deficiencies of **Bauer** in relation to claim 27 are equally applicable to claim 28. In addition, claim 28 recites wherein the central control unit is configured to exchange input and output signals with the control apparatuses without conversion of the command protocol software associated with the control apparatuses.

As noted above, **Bauer** has not been found to discuss a central control unit that is configured to use with control apparatuses having different manufacturer-specific command protocols and different associated command protocol software. As such,

Bauer cannot be fairly read to anticipate the claimed central control unit that is configured to exchange input and output signals with the various control apparatuses without conversion of the command protocol software associated with the control apparatuses.

For at least these additional reasons, the final rejection of claim 28 should be reversed.

VIII. Conclusion

In view of the foregoing, it is respectfully submitted that the claims are patentable over the applied art and that the final rejection should be reversed.

This brief is being submitted along with a payment by credit card in the amount of \$540.00 to cover the fee set forth in 37 CFR 41.20(b)(2).

Should a petition for an extension of time be necessary for the timely filing of this brief (or if such a petition has been made and an additional extension is necessary) petition is hereby made and the Commissioner is authorized to charge any fees to Deposit Account no. 18-0988, Order No. SCHWP0184USA.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, L.L.P.

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IX. Claims Appendix

Claims on Appeal

2. The system as set forth in claim 27, wherein the central control unit includes at least one processor, which converts different display information and/or image formats into a predetermined, defined image format.

3. The system as set forth in claim 27, wherein the at least two control apparatuses coupled to the at least two medical apparatus are provided in a rack.

6. The system as set forth in claim 27, wherein the input device includes at least one of a touch screen, a keyboard, a cursor control unit, a mouse, a joystick, a trackball, a foot switch, a touch pad and a speech input device.

9. The system as set forth in claim 27, further comprising a storage unit for storing data captured by the medical instruments and/or data inputted via the input device.

10. The system as set forth in claim 6, wherein at least one device forming the system is mounted to a ceiling of an associated operating room.

20. A system comprising:

a central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software; and

a common output display device coupled to the central control unit via a bus, wherein the bus provides electrical separation between the common output display device and the central control unit;

at least one input device coupled to the central control unit and configured to receive operator input; and

wherein the central control unit is configured to receive output signals from the at least two control apparatuses and adapt the received output signals for display on the common output display device, and the central control unit is configured to receive input signals from the at least one input device and relay the received input signals to the at least two control apparatuses; and

wherein the central control unit is configured to receive output signals and relay received input signals without conversion of the received input signals to command protocols of the least two medically applicable apparatuses.

22. The system as set forth in claim 20, wherein the common output display device is a single central input and output display device comprised of a single touch screen display.

24. In a system including at least two medically applicable apparatuses, the medically applicable apparatuses each being coupled to a different control apparatus, the control apparatuses having different manufacturer-specific input and output specifications, a central interface unit coupled to input and output connections of said at least two control apparatuses, wherein the central interface unit includes at least one processor that is configured to convert different manufacturer-specific display information and/or image formats from the control apparatuses into a predetermined, defined image format for display on a common output display device, wherein the central interface unit is configured to provide selective display of output data from the medically applicable apparatuses alone or in combination on the common output display device.

25. The central interface unit as set forth in claim 24 in combination with a single output display device, wherein the central interface unit provides for selective display of data from different medically applicable apparatuses alone or in combination on the single output display device.

26. The system as set forth in claim 27, wherein the input device, the common output device, and the at least two medically applicable instruments are positioned in an operating theater, and the central control unit and the at least two control apparatuses are positioned outside the operating theater.

27. A system comprising:

a central control unit configured to couple to input and output connections of at least two medically applicable instruments via at least two control apparatuses having different manufacturer-specific command protocols and associated command protocol software;

a common output display device coupled to the central control unit via a bus, wherein the bus provides electrical separation between the common output display device and the central control unit; and

at least one input device coupled to the central control unit and configured to receive operator input;

wherein the central control unit is configured to receive input signals from the at least one input device and forward the received input signals to the at least two control apparatuses without controlling the medically applicable apparatuses.

28. The system of claim 27, wherein the central control unit is configured to exchange input and output signals with the control apparatuses without conversion of the command protocol software associated with the control apparatuses.

X. Evidence Appendix

None.

XI. Related Proceedings Appendix

None.